/79 cont./

226 ballast. According to the information I have gathered, these nets are used for fishing in deep water. They are dragged simultaneously by several balsas or used as dams. Many people are necessary to handle them.

"As the nets accumulate algae and aquatic refuse of all kinds, the Uro carry little brooms with them, with which they clean the meshes once the net is out of the water. To disturb the water and chase the fish toward the nets or weirs, the Uro have sticks with balls of totora attached to their ends. They move them in a vertical direction.

To bring the fish into their nets the Uro, like many /80/ /Fig. 23 appears here/ /81/ /Fig. 24 appears here/ /82/ Indian tribes of America, construct barriers which they call kenza. These dikes are formed of bundles of totora. Each is composed of five or six rushes laid out in the same direction and attached by the thinnest upper part. They transport these bundles on their balsas to the spot which seems to them the most propitious for fishing, and there they erect their barrier. To sink the bundles of totora in the mud, they use the boat hook (l'okena) with which they propel their small boats. A bundle is placed against the boat hook, the point of the latter resting on the ligature of the bundle. The whole thing is thrust into the earth vertically. The end of the bundle protrudes several centimeters above the surface of the water. They repeat the operation until they have raised a dike which is sufficiently compact to retain the fish. The barrier has the shape of an angle which is open in the direction of the current. The two sides are straight or curve slightly inward. They end in an opening about one meter wide, whose edges, more resistant than the rest of the barrier, are composed of two bunches 20 centimeters in diameter. In contrast to the other bundles, the latter have a transverse ligature a few centimeters from the surface.

[501]

Facing this opening there is generally an islet of totora which protects the barrier against the wind and to which the fisherman can attach his balsa. There he stations himself with his net.

[text continues on p. 11]

/84 cont./

396 [147] The construction of these rafts is rather simple, although it demands great manual skill and considerable expenditure of strength. The keel is composed of two enormous spindle-shaped sheafs of totora tied together. The natives obtain them by heaping up and intertwining stalks of totora of unequal length (Pl. IV, B /see p. 24/); they take care that the shortest remain inside and they cover these with progressively longer stalks until the total forms a compact mass. The rope which maintains each of these rolls /85/ /Fig. 25 appears here/ /86/ is crossed at each turn with that of the other sheaf. Two padded rims are then fastened to the edge, where they serve as a railing and add to the stability of the craft. The only instrument to which the Indians have recourse in making these rafts is a wooden hook (Fig. 24, 5 /see p. 10/), which they use to lift the straw rope, either to tighten it or to pass the rope which joins one sheaf to the other under it. This alternating play of the ropes obliges the balsa constructors to work always two by two (Pl. IV, C /see p. 24/). For navigating, the Uro have long boathooks, l'okena, the wood for which comes from the eastern slopes of the Andes. The extremity of these poles ends in a sort of trident which prevents them from sinking too deeply in the mud of the lake (Fig. 25, 2 /see p. 15/). 501

285 Mats. The Uro Indians have several uses for the rush (totora) mats. They make the framework and roofs of their huts from it, their beds, the door of their house, and the sails of their balsas. Making them is not complicated. The totora stalks are spread out on five or six parallel ropes, stretched between stakes, and attached to them in little piles.

283 Rope-making. The Uro are obliged to constantly make rope, the indispensable accessory for the two industries which have just been mentioned. Different types of gramineous plants, [284] among them the Stipa ichu Kunth, Festucha orthophylla Pilger, and F. dissiflora Griseb (1), furnish them with raw material of

1. Parodi, p. 4.

[text continues on p. 16]

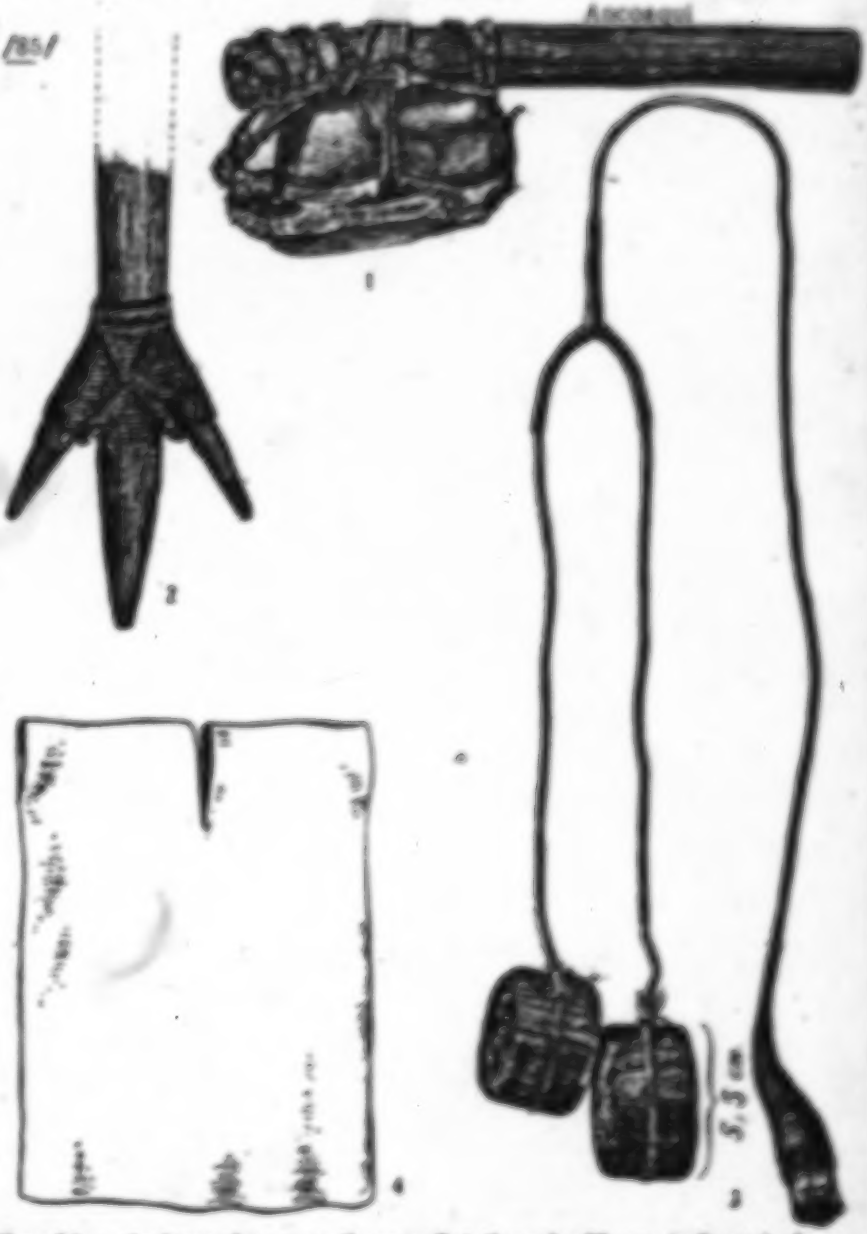


Fig. 25. — 1: Stone hammer (kxaumaña) (length: 27 cm.); 2: end of the boathook which the Uru use to propel their cane rafts (t'okena); 3: bolas (skuni); 4: tunic of white wool which the Uro wear over their modern clothes for certain occasions (ira) (length: 1.05 m. width: 0.62 m

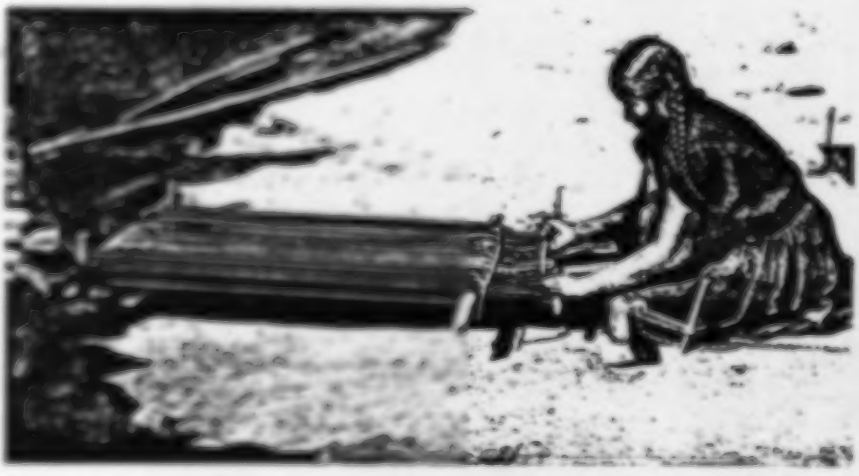
Indefinite--22 8-5 (1931) 1935 SF24 Uru SF24
Ancoaqui

Plate 42.

A. B.

Indians fishing with landing nets.

C. Woman weaving.



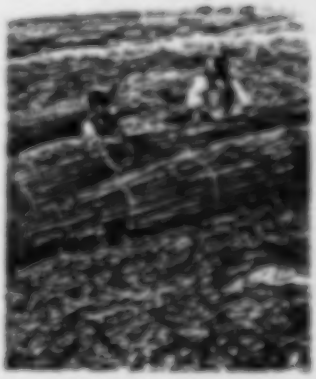
[End Plate 2]

1:Métraux--24 E-5 (1931) 1935 SF24 Uru SF24
Ancoaqui

396
[301]

A. A boatyard for balsas at Ancoaqui.

[291]



B. Manufacture of balsas.

396
291

C. Manufacture of balsas.

[End Plate 3]

3:Vellard--6b D.E-5 (1938-1944) 1949 9F24 Uru 9F24

Plate III

5. Balsas of totoras (1942).

6. Balsa with large net (yaú' kaka). Account VI /see p. 16/.

/173 men./

539 14. We are going to place a rim of totoras. 15. He attaches
[96] the rim of the balsa. 16. He tightens the rim of the balsa.
17. We are going to finish. 18. (The totora) is still a bit
loose; we are going to tighten it a bit more. 19. All is
finished. 20. Now the balsa is ready. 21. Let us go fishing
[60] with the new balsa. 22. We are not going to have a sail?
23. We are not accustomed to use a sail; there is too little
water. 24. We always use a fish hook manipulated by hand.
[94] 25. Here is the cross which is attached to the large net so that
the fish can enter. 26. The fish is going to enter (the net);
now we are going to lift (the net) up and put it in the balsa.

Remarks

This text is divided into two parts. The first, 1 to 26, describes the making of balsas from totoras. The second is a succinct description of fishing with a net in the swamps of the Desaguadero.

539 To build their balsas the Uro use the Scirpus totora,
[96] which used to grow in abundance in the swamps of the Desaguadero and at numerous points on the shores of Lake Titicaca. Two Indians work at the same time on the construction of a balsa. First they lay out the bunches of totoras
[14] on the ground, from which they make three spindles the length of the balsa, two large side ones and a middle one which is shorter and thinner; this middle cylinder, the "heart of the balsa," used to stabilize the craft, has passed unnoticed by practically all the authors who have concerned themselves
[91] with the Uro. Only the fishers on the Lagoon of Arapa, to the north of Lake Titicaca, who speak Kolla, build balsas, small and rather narrow, formed with two cylinders.

[214] The totora of these cylinders is held in place with the aid of thin straw plaits (2-4), which hold the cylinders evenly between them. These straw ropes are tightened in a progressive and methodical fashion by two /174/ men, working alternately

/[16 copy]/

on each side of the balsa (16, 12, 17) in order to make the two large side cylinders equal in weight, bulk, and compression. This is the delicate part of the manufacture, on which the stability and quality of the craft depend. The Uru use wooden hooks for this job (12). At the same time they compress the totora with a stone hammer (13), adding or removing totora as necessary; they water it from time to time to prevent it from drying. When the work is finished the middle cylinder, the heart of the balsa, completely hidden between the side cylinders, is invisible. Depending on the size, the construction of a balsa takes an average of three to six days. The life of a balsa is short; after having been wet they become heavy and rot inside; they are good for six months to one year in general.

The balsas used on the Desaguadero and on the low parts of the lake in the neighboring lagoons which are not very deep (Arapa, Umaihayo) do not have sails (21), or only a very small sail, in contrast to the balsas on the large lake which they propel by sail. The Uru steer them with the help of a boat hook ending in three teeth, which they push against the muddy bottom (24). These boat hooks are identical to those of the Guarani of upper Paraguay, who belong to the Tio-Arawak /Tio-Arawak/ linguistic group.

From the point of view of grammar, note the frequent use of the repetitive particle -ky-, indicating that the action expressed by the verb is habitual. Also note the repetitions of words or roots to reinforce the idea expressed (5-13, etc.)

The verb kêt' ky expresses the idea of carrying off, of lifting up, of raising (22-23); compare it with 4-5 of text III.

/179/

V. Nocturnal Fishing
(Account by Carlos Kope)

(See p. 162 /in the foreign text/)

Free Translation

1. All is ready; we can leave now in the balsa. 2. This balsa has a very raised prow so that the very strong waves will not submerge it. 3. We are going to erect the mast. 4. We are going to hoist the sail. 5. The wind is coming from another side; let us change (the orientation) of the sail. 6. The sail is swelling very much; the wind is strong. 7. We are going to lower the sail. 8. We are going to put a rock on the sail so that the wind does not carry it away. 9. We are going to place a piece of wood vertically. 10. We are going to hang a pot (from it). 11. We are going to spread (on the water) (a bed) of totoras to light a fire (above). 12. The fire is burning; the water is going to boil and we shall drink.

Remarks

In the first part of this text (1-6) the narrator describes the departure for fishing and the maneuvering of a balsa with a sail of the type used in certain parts of the Desaguadero with a simple mast; their raised prow permits them to withstand rather strong waves. The balsas on Lake Titicaca are larger, with a prow which is also raised, but with a double mast and a larger sail.

The second part (7-12) shows the preparations of the Uru for spending the night on the water. The balsa is halted in shallow water; the sail held by a large stone shelters the fishers from the wind. A boat hook placed in the mud is used to hang a pot above /179/ a fire of totoras, lighted on a thick bed of reeds thrown on the water.

/181 cont./

*539 [501] it will not rot. 8. This is a balsa from the big lake. 9. Its prow is raised. 10. That one is a big balsa. 11. That one is a small balsa. 12. There are no other balsas. 13. This is a house of the other people (the Aymara). 14. This is a house of unburnt bricks (adobes). 15. This is a house of the Aymara community (lit., "of the other people"). 16. What more shall I tell thee? That is all. 17. Now I want to rest, oh father.

Remarks

*539 124 This text reproduces the comments of old Manuel Inta, looking at a series of photographs of his native village, Iru-Itu, and of the region. The photographs of Iru-Itu were recognized without difficulty; those of less familiar sites provoked various reflections before being well identified (13-15).

*539 193 1. xwí, interrogative particle; kapíllá, this is the Spanish word capilla, "chapel." 4. We have not found any passive form among the Uru; to express the idea "has been seen from the back," the informant used the active voice: cèrk'- ku ţi- nís- čay, literally one he has seen; ku indicates the recent past. It must be noted that this cast of mind was spontaneous, no question having been put to him; ţ used in the text is an elision for i, "one," and has suffered a contraction with the previous vowel. 9. hoća expresses the idea of "point," being able to indicate as well as the raised prow of the balsa, a mountain summit, the nose, or the verb "to point" in the sense of being in a pointed form. 9-10-11. The narrator describes the three principal types of balsas of the Uru: with a raised, pointed prow for navigation on Titicaca (big lake); the big fishing balsas of the Desaguadero for three or four people, and the small balsas for one or two people. 13-15. tòxša, "others," or tòxša náka, /182/ "other people," the usual way to designate

*539 [501]

[101 829]

[16th Century]

/30 cont./

101 between ou and o /French sounds/; or else urito (ourito), an affectionate diminutive, or chana wawa, "younger children." But at the same time they give them the contemptuous name of hoslé or huslé, "bastard," without father or master," or on the other hand the very respectful one of haké waka, "sacred men."

The fishermen of Lake Titicaca are called by the other natives uru, uro, kotá-haké ("men of the Lake"), uma-hake ("water men"), and chailua-uira ("fishermen") in Aymara; laguneros /"lake men"/ in Spanish; uru, uru-kuna ("Uru men"), cocha kuna ("men of the Lake"), kocha-la ("those who go on the lake"), in Quechua.

Documents of the Spanish Chroniclers

101 175 Morua (Fr. Martin de)

...but since the peoples of Peru are many, very different in appearance /forma/ and language, according to the bigness of the region and province, they did not all live in the same manner nor did they have the same customs, but in some parts some are very slow and dull, as in Collao and other areas; [131] [062] because some lived close to the great lake of Titicaca and subsisted on the totora and fish that were found in the lake, and these were called Uros, and their descendants exist today, and of the others, Collas and Puquinas, some of them or generally most raise livestock, and some live near the said 175 lake, intermixed with the said Uros; and these eat raw fish, [062] which they catch with rafts made of totoras; and they wore [501] clothes made of common reed-grass, which they reaped and [291] cut on the lake shore and wove like mats, and with it they [094] made a sort of jacket which they were accustomed to wear; [241] and they do not sow anything, nor do they trouble to make [342] houses, but they merely subsist on plants, although there also [222] exists among them a seed similar to milo, which grows on

5:La Barre E-5 (1937-1938) 1946
SF24 Uru SF24

DRESS AND ORNAMENTS

Anciently, it is said, the *Uru* went entirely nude, which is quite incredible in view of the bitterly cold winters in this region. The essential male costume is like the pre-Columbian *Chipaya* uncu—a sleeveless, sacklike garment made of an untailored textile, sewed partway up the sides with openings for the arms, and partway across the top with an opening for the neck. This is woven of llama yarn on a simple bar loom staked in the ground. Recently, most *Uru* males have adopted trousers of the *Aymara* style: short, with a slit at the heel, and tailored of native homespun after a Colonial pattern. The slit permits the trousers to be rolled up more easily when a man fishes from a balsa or wades in shallow water. Leather sandals are sometimes worn when traveling, but people usually go barefoot. A knit wool cap, with *Aymara*-style earflaps, is sometimes topped with a crude, *Aymara*-manufactured felt hat. A belt is sometimes worn, and occasionally a thick woolen poncho. Caps woven of bird feathers were known in ancient days.

Uru women wear black llama-wool skirts, girdled at the waist, and untailored bodices pinned at the top over each shoulder with a large-headed copper pin (tupu). When traveling in cold weather, the women wear woven woolen wimples over the head under the hat.

Women part their hair in the middle and wear it in two braids tied behind the back with vicuña-wool filets; only a few still wear the ancient style "Titicaca braids"—countless small braidlets all over the head. Women wash their hair in fermented human urine. *Uru* men wear their hair short in quasi-European fashion or in an all-around tropical bang.

BOATS

The *Uru* are famous balsa builders (pl. 115, *bottom*). Their craft, though actually rafts made of totora reeds, are shaped like boats and are highly navigable even in narrow, shallow swampways. The reeds are cut with knives attached to poles, then, after drying, are stacked in shocks like corn. Nearly every able-bodied *Uru* male has quantities of this material in all stages of preparation for balsas. During spare moments in their houses, they are continually braiding ichu grass into tough ropes to bind the reed bundles. The keel is formed of a long, thin, tubular bundle of reeds; and separately lashed to this keel are two thick, cigar-shaped pontoon-bundles. Each of these pontoons is built up of reeds so arranged as to be very thick in the middle of the boat and to have upturned points at each end. An acute-angled wooden tool with a groove inside one arm is used to tighten the binding. To keep out small waves, gunwales consisting of much thinner bundles of totora are lashed to the upper outside

5:La Barre E-5 (1937-1938) 1946
SF24 Uru SF24

edge of the pontoons. The whole makes a sea-sled type of hull, which will not easily overturn even in the fierce storms of Lake Titicaca.

The balsa is poled along with a stubby trident, the wood for which comes from the yungas east of the Cordillera Real. In the open lake, a trapezoidal reed sail is rigged on two poles stuck deeply into the pontoons and forming an inverted V. The balsa is unable to tack in the wind, however, for it lacks a centerboard. Balsas are dragged onto the land from time to time lest they become waterlogged and rot. Though they may be bought for 10 to 16 Bolivian dollars (bolivianos), they represent much labor.

MANUFACTURES

Uru material culture is simple. Owing to the lack of trees, the giant totora reed (*Scirpus tatora*) is of extraordinary importance, providing material for fishweirs, roof mats (pl. 117, *top*, *left*), floor and sitting mats, rafters, doors, balsas, sails, and even food for animals and people. Metallurgy is unknown. Pottery making has been abandoned in recent times.

Basketry.—Crudely coiled baskets and twined tortora reed baskets are made.

Textiles.—The *Uru* make twine bird nets, mats of various types, sails, grass rope, and simple baskets (both coiled and twined). Women spin llama wool as incessantly as the men make grass rope, using a wooden spindle. They weave the yarn into cloth on a simple bar loom staked taut on the ground (pl. 116, *top*), rolling up the finished cloth on the end bar. When the end of the warp is approached, they weave from the other end, and finally fill in the last intermediate strip with a needle. Knitting is not pre-Columbian here, but *Uru* women are very skillful in knitting *Aymara*-type caps (gorros), often with amazingly intricate animal figures and other designs. Men's slingshots are very beautifully braided of wool with varicolored diamond designs like the markings on snakes. The *Uru* also make thongs of twisted rawhide still retaining the fur, and heavy braided woolen ropes for lashing loads on burden animals.

An extremely interesting textile, apparently unique to the region southeast of Lake Titicaca, is a kind of feather cloth described by David Forbes (1870). The down of lake birds was spun into thread, and then knit into caps and children's socks and gloves. Only a few specimens of these exist in museums.

Weapons.—To make bolas, the *Uru* buy cotton thread from traders and wind this tightly around a cord Y to make a durable bird-hunting weapon. A straw-cord bola perdida, similar to that of Patagonia, is also used.

Metals.—The *Uru* know no metallurgy, although the *Aymara* of Jesús de Machaca, scarcely a day's journey away, are famous for their

5:La Barre E-5 (1937-1938) 1946
SF24 Uru SF24

501
[226]

[291]
[139]
[505]

PLATE 115.—Uru fishing and gathering totora reeds. *Top:* Man putting down a tripod fish net. *Bottom:* Towing bundles of reed with a balsa. (Courtesy Alfred Métraux.)

[P. 582-C]

8:Fain T-5 (ca.1954) 1955
SF24 Uru SF24
Uru I+C
501

Fig. 7: The rafts, with their tall pointed bows, have the gracefulness of gondolas.

346 There
[996] were some withered Palm-Sunday decorations made from the rushes which border the river. They were plaited and twisted and fringed and hung on rusty nails. The door stood partially open. A low adobe-wall surrounded the building. There were no tombs in evidence. A family of donkeys had taken [231] up their residence there. We gave them some biscuit and apple, and they followed us down the stony 126 path to where the village was assembled. The cameras were ticking, and our chauffeur Carlos had been promoted to stagehand with a wooden clapper. Our star was continuing her role with renewed enthusiasm; leaning against the wall were two boys 11 or 12 years old, one had beautiful smooth regular features. I photographed him, but he never moved, nor seemed conscious of our presence. We left him [396] standing motionless and followed the younger one [283] down to the river where a man was plaiting rushes, preparatory to making a balsa.

824 Some fifteen years ago the whole region suffered [131] from a severe draught. The waterlevel of the lake descended from twelve to fifteen feet and many of the marshes dried out, and the reeds, the *totora*, withered and disappeared. These totoras play as important a part among the Uru as the llama among [501] the Aymara or Quechua on the Altiplano. While the [264] stems are used for making balsas, sails and ropes, [203] the roots or *kzouras* are the staple diet of the Uru, who also use it to brew a kind of beer, allowing the tubercles to ferment.

132 Fortunately in these last few years the climatic con-
137 ditions have once more returned to normal, and with the rise of the lake the totoras have once more in-
501 creased. These rafts, with their tall pointed bows, have the gracefulness of a gondola. They are composed of three cylinders, two forming the sides and
396 one the centre. The rushes are plaited into long
283 braids, the end being held between the man's toes. These braids are then plaited together and together again, and all these ropes are assembled, moistened and laced together. Two men work simultaneously,

[2.313-A]

CYNTHIA FAIN: THE PEOPLE OF THE LAKE

Two men work simultaneously
396 tightening the braids with little wooden hooks,
[983] taking care that the two parallel cylinders have
[912] exactly the same size and weight, so that the balsa will not capsize. Herein lies the art of balsa-building. While the construction is in progress, a third man waters the cylinders, so that the reed remains
[412] slightly damp. For hours on end they tighten the cords, and with a little stone hammer they tap the braids together so that they end by forming a substance hard as wood. The balsa is then turned over, the two pointed ends are placed in holes in the ground, and earth is tightly packed around them, so that they may keep their form. Here they remain for several days, afterwards they are taken out, and a hole is made in which the mast is placed, and the
● 501 reed sail is attached to it by three cords. In the very small balsa the fisherman holds a stick to which a little sail is attached. The large balsas measure between twenty-one and twenty-five feet. They draw about forty cms. of water and can carry from eight to ten passengers. The small balsa is about seven feet long and carries two passengers. When not using a sail, they employ a long double paddle, or a punt-pole when circulating among the rushes. The
[961] life of the balsa is short: they are built in three or
[135] four days, but they are rarely deemed safe for use on the lake, where storms are frequent for more than six months in the year. Generally they end their days as punts which keep to the edge of the lake among the rushes.

126 The cameras were set up, and I took photographs and
123 then wandered up the river, where suddenly I perceived the rancous lady, who was if possible even more insulting than on the previous day. Seeing the camera, which she doubtless took for the eye of
[1188] Satan, she flung a stone which missed me by yards,
[201] and, uttering more curses, fled, making the sign of the cross and at the same time keeping her fingers crossed, so as to be well on the safe side with all the
126 forces of the supernatural. We had by now filmed and photographed the population from almost every

9:La Barre E-4,5 (1938) 1941
SF24 Uru SF24

earthen sties, or mud-and-stone conical huts. I observed no cats at Ancoaqui, though they occur in Aymára villages a day's journey hence.

Agriculture is unimportant among the Uru, although they cultivate *kañawa* (or "quinoa," Uru *kula*, a millet-like grain) from which they make a toasted ground powder they call *pitu*. It is pleasant tasting and is very concentrated and nourishing. They also cultivate a small amount of "papas amargas" or small, bitter potatoes from which they make *čuñu* (Uru *auni*). The succulent white roots of the *totora* reed (*suļu*, *ḵauri*, or *kuima*) are commonly eaten raw by the Uru. These vegetable products they augment in their trading of fish to the Aymára.

Kañawa is ground on a stone slanting outward from the woman's lap with a flat stone bar, whence the ground grain collects in a cloth at the far, lower end. The Uru make a beer they call *likša* or *likši*, or *xawinskania* according to Palevecino. Posnansky (page 102) says they sometimes make *chicha* of masticated maize also; *likši* is made from a plant called *kiwi* or *kiwi*, which he supposes is aquatic. This same author considers the Uru somewhat more abstemious of alcohol than the Aymára but this is probably less a result of inclination than extreme poverty. This Bolivian student notes also as a food of the Uru "camaroncitos [?shrimp] transparentes" (Uru *koykoya*), Amphipods of the group *Hyalella pallida*, *H. robusta*, etc. from two to ten millimeters long, which live in the *totora* roots. Toasted, these are a rich, nutritious food in times of scarcity, as well as an "estimulante sexual." The Uru chew *coca*, of course, as do all Andean natives, trading their fish for it with the "cholo" or halfbreed tradesmen who bring the narcotic leaf from the *yungas* or deep semi-tropical valleys of the Departamentos of La Paz and Cochabamba.

Fishing is the basis of Uru economy, however, as it appears to have been throughout the period of European knowledge of them. Fishing by moonlight I was told is preferred as the best time. Fish fences, *kenša*, of *totora*-bundles stuck in the soft mud of the river bottom were observed several times in the Desaguadero. They are of the same type that is used in the swampy shallows of southern Lake Titicaca. Palavecino thus describes their construction:

> Each of these [bundles] is made of five or six reeds placed in the same direction and attached by the upper thinner part. They carry these bundles in their *balsas* to the place which appears to them best for fishing and there build their weir. To drive the bundles of *totora* into the mud they use the gaff (*okena*) with which they push their boats. [This is a stout pole with a stubby tripod at the base, so that it will catch on roots and water plants and not sink into the soft mud when the boat is poled along (W.Lab.)] The bundle is placed against the gaff, the end of which rests on the liga-

9:La Barre E-4,5 (1938) 1941
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396 knives on the ends of poles, then stacked in shocks like corn, after they have been dried spread out in the sun. Nearly all able-bodied Uru males have quantities of these materials in various stages toward the manufacture of the complete boats. In their houses, even, in spare moments, men are continually braiding *ičυ*-grass into tough ropes to bind the boats together.

Though shaped like a boat, the *balsa* is of course actually a raft. A handful of reeds is bound together and repeatedly thickened with more reeds as the middle of the cigar-shaped element is reached, then tapered off again into a point. The only tool used in the manufacture of this is a wooden hook [413] (*kaχlu*) with a handle at an acute angle to it, used to tighten the lashing of grass rope. A more tubular and thinner sheaf of reeds forms the keel of the *balsa*, and two of the fat cigar-shaped bundles are separately lashed to it, forming a sort of sea-sled type of hull, which cannot be overturned in a storm; the thinner ends of these cigar-shaped bundles are slightly raised fore and aft of the boat. To form gunwales, a still thinner and tubular sheaf of reeds is lashed (during its own round-and-round binding with braided grass rope) through the original lashing of the hull-elements. One of these gunwales (*pinča*) is placed on each side of the top of the hull-elements to prevent splashing of water onto the occupants of the boat as it is poled ● 501 along. The Uru *balsa* thus differs from the Aymára[34] type in that its two [191] large basic elements are lashed to a central "keel" and not to each other (though the bulwark lacings are similarly looped through the lacings of the two hull-elements); it has therefore five instead of four elements. The Uru also rig their *totora*-mat sails with a slight difference from the Aymára. [502] Sails, however, can only be used on the Lake and on the open river "before the wind" since the boat has no center-board and cannot tack. In the narrow swampways a punt pole or gaff (*teksi*) with a stubby trident at its end is [824] used to push the boat along. The wood for these comes from the *yungas* of 501 the Cordillera Real's eastern, tropical slopes. (See Posnansky, Fig. 83.) A 435 complete *balsa* cost in 1937 from ten to sixteen *bolivianos*, then worth about 5¢.

285 Of Uru textiles we have already noted twined single-element *totora balsa*-sails, twined many-element mattress-mats of reed, fish- and bird-nets (which they themselves make of cord obtained in Guaqui from La Paz), and 283 single-element twined roof mats of *totora*. Métraux has an excellent description (page 86) of the preparation by soaking, pounding, and rolling of the wiry grasses of the region (*Stipa ichu*, *Festucha orthophylla*, and *F. dis-*

[113] [34] Lorenzo R. Parodi, *Las balsas usadas por los Aymaras en el lago Titicaca* (Physis, Revista de la Sociedad argentina de ciencias naturales, Vol. 11, Buenos Aires, 1932), pp. 145–149. Métraux' description (JSAP 27: 84) is of the Aymára type.

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FIG. 1. Uru houses. *Above*, hut with corbelled sod roof; note crude plow at right side of hut and balsa poles by door. *Below*, typical round Uru house with mat roof, Aymára style rectangular house to rear; Desaguadero swamps in the background.